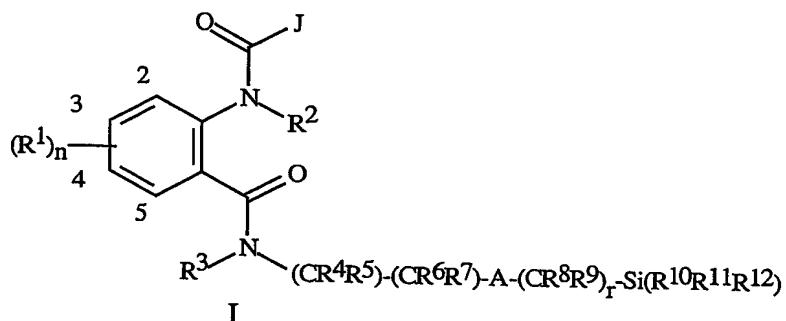


CLAIMS

What is claimed:

1. A compound of Formula I, its *N*-oxide or suitable salts thereof



5

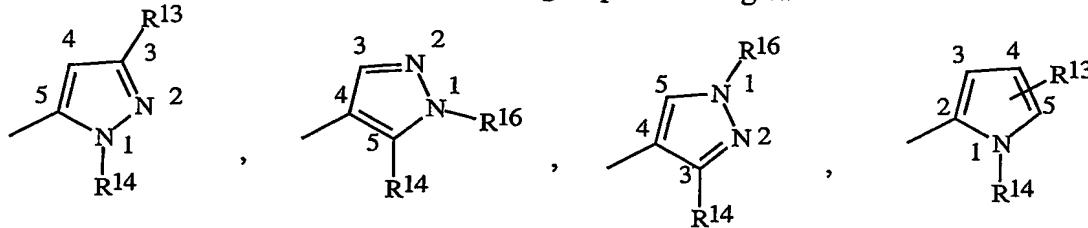
wherein:

A is O or $S(O)_m$;

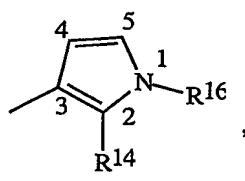
J is a phenyl optionally substituted with one to four substituents independently selected from the group R^{15} ; or

10

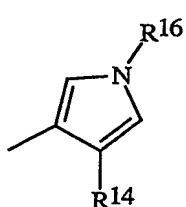
J is a heterocyclic ring selected from the group consisting of



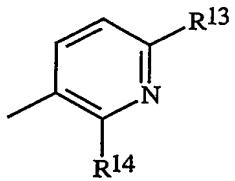
J-1



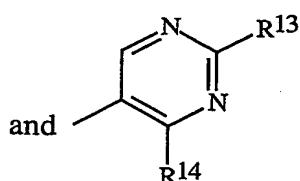
J-2



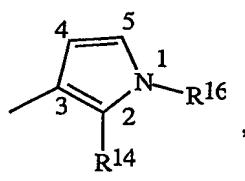
J-3



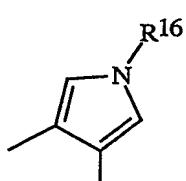
J-4



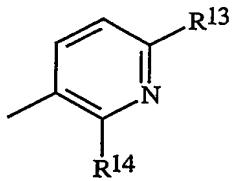
J-5



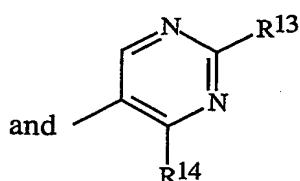
J-6



J-7



J-8

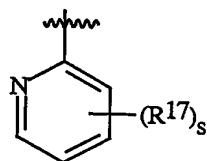


15

each R^1 is independently selected from the group consisting of C_1-C_6 alkyl, C_2-C_6 alkenyl, C_2-C_6 alkynyl, C_3-C_6 cycloalkyl, C_1-C_6 haloalkyl, C_2-C_6 haloalkenyl, C_2-C_6 haloalkynyl, C_3-C_6 halocycloalkyl, halogen, CN, NO_2 , hydroxy, C_1-C_4 alkoxy, C_1-C_4 haloalkoxy, C_1-C_4 alkylthio, C_1-C_4 alkylsulfinyl, C_1-C_4

alkylsulfonyl, C₁-C₄ haloalkylthio, C₁-C₄ haloalkylsulfinyl, C₁-C₄ haloalkylsulfonyl, C₂-C₄ alkoxy carbonyl, C₂-C₄ alkylaminocarbonyl, C₃-C₅ dialkylaminocarbonyl, C₁-C₄ alkylamino, C₂-C₈ dialkylamino, C₃-C₆ cycloalkylamino and C₃-C₆ trialkylsilyl; or
5 each R¹ is independently selected from the group consisting of phenyl, benzyl and phenoxy, each optionally substituted with C₁-C₄ alkyl, C₂-C₄ alkenyl, C₂-C₄ alkynyl, C₃-C₆ cycloalkyl, C₁-C₄ haloalkyl, C₂-C₄ haloalkenyl, C₂-C₄ haloalkynyl, C₃-C₆ halocycloalkyl, halogen, CN, NO₂, C₁-C₄ alkoxy, C₁-C₄ haloalkoxy, C₁-C₄ alkylthio, C₁-C₄ alkylsulfinyl, C₁-C₄ alkylsulfonyl, C₁-C₄ alkylamino, C₂-C₈ dialkylamino, C₃-C₆ cycloalkylamino, C₄-C₇ (alkyl)cycloalkylamino, C₂-C₄ alkylcarbonyl, C₂-C₆ alkoxy carbonyl, C₂-C₆ alkylaminocarbonyl, C₃-C₈ dialkylaminocarbonyl or C₃-C₆ trialkylsilyl;
10 R² is H; or C₁-C₆ alkyl, C₂-C₆ alkenyl, C₂-C₆ alkynyl or C₃-C₆ cycloalkyl, each optionally substituted with one or more substituents selected from the group consisting of halogen, CN, NO₂, hydroxy, C₁-C₄ alkoxy, C₁-C₄ alkylthio, C₁-C₄ alkylsulfinyl, C₁-C₄ alkylsulfonyl, C₂-C₄ alkoxy carbonyl, C₁-C₄ alkylamino, C₂-C₈ dialkylamino and C₃-C₆ cycloalkylamino; or
15 R² is C₂-C₆ alkylcarbonyl, C₂-C₆ alkoxy carbonyl, C₂-C₆ alkylaminocarbonyl or C₃-C₈ dialkylaminocarbonyl;
20 R³ is H, C₁-C₆ alkyl, C₂-C₆ alkenyl, C₂-C₆ alkynyl, C₃-C₆ cycloalkyl, C₁-C₄ alkoxy, C₁-C₄ alkylamino, C₂-C₈ dialkylamino, C₃-C₆ cycloalkylamino, C₂-C₆ alkoxy carbonyl or C₂-C₆ alkylcarbonyl;
25 R⁴, R⁵, R⁶, R⁷, R⁸ and R⁹ are each independently H, C₁-C₄ alkyl or C₁-C₄ haloalkyl; R¹⁰ and R¹¹ are each independently C₁-C₄ alkyl or C₁-C₄ alkoxy;
R¹² is C₁-C₄ alkyl, C₁-C₄ alkoxy or phenyl optionally substituted with one to three substituents selected from the group R¹⁷; or
each R¹³ is independently selected from the group consisting of H, C₁-C₆ alkyl, C₃-C₆ cycloalkyl, C₁-C₆ haloalkyl, halogen, CN, C₁-C₄ alkoxy, C₂-C₄ alkoxy carbonyl, C₁-C₄ alkylthio, C₁-C₄ haloalkoxy, C₁-C₄ haloalkylthio, C₁-C₄ haloalkylsulfinyl and C₁-C₄ haloalkylsulfonyl;
30 R¹⁴ is C₁-C₆ alkyl optionally substituted with one or more substituents selected from the group consisting of halogen, CN, NO₂, hydroxy, C₁-C₄ alkoxy, C₁-C₄ alkylthio, C₁-C₄ alkylsulfinyl, C₁-C₄ alkylsulfonyl, C₂-C₄ alkoxy carbonyl, C₁-C₄ alkylamino, C₂-C₈ dialkylamino and C₃-C₆ cycloalkylamino; or phenyl optionally substituted with one to three substituents selected from R¹⁷; or
35

R¹⁴ is



;

R¹⁵ is C₁-C₆ alkyl, C₃-C₆ cycloalkyl, C₁-C₆ haloalkyl, halogen, CN, C₁-C₄ alkoxy, C₁-C₄ alkylthio, C₁-C₄ haloalkoxy, C₁-C₄ haloalkylthio, C₁-C₄ haloalkylsulfinyl or C₁-C₄ haloalkylsulfonyl; or

5 R¹⁵ is phenyl or pyridyl optionally substituted with one to three R¹⁷;

R¹⁶ is H, C₁-C₆ alkyl, C₁-C₆ haloalkyl, C₃-C₆ alkenyl, C₃-C₆ haloalkenyl, C₃-C₆ alkynyl or C₃-C₆ haloalkynyl;

each R¹⁷ is independently C₁-C₆ alkyl, C₃-C₆ cycloalkyl, C₁-C₆ haloalkyl, halogen, CN, C₁-C₄ alkoxy, C₁-C₄ alkylthio, C₁-C₄ haloalkoxy, C₁-C₄ haloalkylthio, C₁-C₄ haloalkylsulfinyl or C₁-C₄ haloalkylsulfonyl;

m is 0, 1 or 2;

n is 0, 1, 2, 3 or 4;

r is 0 or 1; and

s is 0, 1 or 2.

15 2. The compound of Claim 1 wherein

A is S(O)_m;

one of the R¹ groups is attached to the phenyl ring at the 2-position, and said R¹ is

C₁-C₄ alkyl, C₁-C₄ haloalkyl, halogen, CN, NO₂, C₁-C₄ alkoxy, C₁-C₄

haloalkoxy, C₁-C₄ alkylthio, C₁-C₄ alkylsulfinyl, C₁-C₄ alkylsulfonyl, C₁-C₄

haloalkylthio, C₁-C₄ haloalkylsulfinyl or C₁-C₄ haloalkylsulfonyl;

20 R² and R³ are each independently H, C₁-C₄ alkyl, C₂-C₄ alkenyl, C₂-C₄ alkynyl,

C₃-C₆ cycloalkyl, C₂-C₆ alkylcarbonyl or C₂-C₆ alkoxy carbonyl;

R⁴, R⁵, R⁶ and R⁷ are each independently H or Me;

R⁸ and R⁹ are H;

25 R¹⁰, R¹¹ and R¹² are Me;

n is 1 or 2; and

r is 1.

3. The compound of Claim 2 wherein:

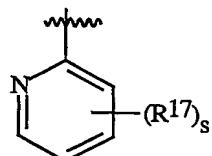
each R¹ is independently CH₃, CF₃, OCF₃, OCHF₂, S(O)_pCF₃, S(O)_pCHF₂, CN or halogen;

R² and R³ are H; and

p is 0, 1 or 2.

4. The compound of Claim 3 wherein

each R¹³ is H, CH₃, CF₃, CH₂CF₃, CHF₂, OCH₂CF₃, OCHF₂ or halogen;
 R¹⁴ is phenyl optionally substituted with one to two substituents selected from R¹⁷; or
 R¹⁴ is

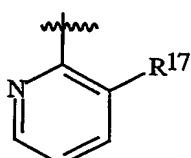


;

5 R¹⁵ and R¹⁷ are each independently C₁-C₄ alkyl, C₁-C₄ haloalkyl, halogen or CN;
 each R¹⁶ is CH₂CF₃ or CHF₂; and
 s is 0 or 1.

5. The compound of Claim 4 wherein:

10 each R¹³ is independently halogen, OCH₂CF₃, OCHF₂ or CF₃;
 R¹⁴ is



; and

R¹⁷ is F, Cl or Br.

6. The compound of Claim 5 wherein:

R⁶ and R⁷ are H.

15 7. The compound of Claim 6 wherein:

J is J-1, J-2, J-4 or J-8.

8. The compound of Claim 7 wherein:

J is J-1;

the R¹ attached to the phenyl ring at the 2-position is CH₃, F, Cl or Br; a second R¹ group is attached to the phenyl ring at the 4-position position, and said second R¹ is CN, CF₃, F, Cl, Br or I;

R¹³ is independently Cl, Br, OCH₂CF₃, or CF₃; and
 n is 2.

25 9. A method for controlling an invertebrate pest comprising contacting the invertebrate pest or its environment with a biologically effective amount of a compound of Claim 1.

10. The method of Claim 9 wherein the invertebrate pest is cockroach, an ant or a termite which contacts the compound by consuming a bait composition comprising the compound.

11. The method of Claim 9 wherein the invertebrate pest is a mosquito, a black fly, a stable, fly, a deer fly, a horse fly, a wasp, a yellow jacket, a hornet, a tick, a spider, an ant, or a gnat which is contacted by a spray composition comprising the compound dispensed from a spray container.

5 12. A composition of controlling an invertebrate pest comprising biologically effective amount of a compound of Claim 1 and at least one additional component selected from the group consisting of a surfactant, a solid diluent, and a liquid diluent, said composition optionally further comprising an effective amount of at least one additional biologically active compound or agent.

10 13. A spray composition, comprising:

- (a) a compound of Claim 1; and
- (b) a propellant.

14. A bait composition, comprising:

- (a) a compound of Claim 1;
- (b) one or more food materials;
- (c) optionally an attractant; and
- (c) optionally a humectant.

15 15. A device for controlling an invertebrate pest, comprising:

- (a) the bait composition of Claim 14; and
- (b) a housing adapted to receive the bait composition, wherein the housing has at least one opening sized to permit the invertebrate pest to pass through the opening so the invertebrate pest can gain access to the bait composition from a location outside the housing, and wherein the housing is further adapted to be placed in or near a locus of potential or known activity for the invertebrate pest.